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PATENT

Attorney Docket No.: RBN-003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Cheatham *et al.* GROUP NUMBER: 1645
SERIAL NUMBER: 10/552,642 CONFIRMATION NUMBER: 1911
FILING DATE: October 7, 2005 EXAMINER: Not yet assigned
TITLE: METHODS FOR IDENTIFYING THERAPEUTIC TARGETS INVOLVED
IN GLUCOSE AND LIPID METABOLISM

CERTIFICATE OF FIRST CLASS MAILING UNDER 37 C.F.R. 1.8

I hereby certify that this correspondence, and any document(s) referred to below, is/are being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Mail Stop: Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 8th day of September, 2006.

Dated: September 8, 2006

Brenda T. Kowalczyk
Brenda T. Kowalczyk

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Submitted herewith is/are:

Transmittal (1 pg.); Supplemental Information Disclosure Statement (3 pgs.); PTO-1449 Form (3 pgs.); Cited Art B1 and C19-C71; this Certificate of First Class Mailing and a return receipt postcard.



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Sir

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicant(s) hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. Also enclosed is C19, which was inadvertently left out of the Information Disclosure Statement which was submitted on October 7, 2005.

☐ Copies of the patents and publications are enclosed.

OR

☒ In accordance with the U.S. Patent Office's partial waiver of the requirement under 37 C.F.R. 1.98(a)(2)(i), only copies of the foreign patent documents and non-patent publications are enclosed.

In addition, Applicant(s) wish to call to the Examiner's attention the following commonly-owned, co-pending patent application(s) and patents, and Office Action(s) issued therein:

- 1) U.S. Application Serial No. 09/750,401, Attorney Docket No. RBN-001, U.S. Patent No. 6,635,422 B2, issued on 10/21/03;
- 2) U.S. Application Serial No. 10/238,306, Attorney Docket No. RBN-001C1, filed on 09/10/02;
- 2) U.S. Application Serial No. 10/309,788, Attorney Docket No. RBN-001CP, filed on 12/04/02;
- 3) U.S. Application Serial No. 10/629,453, Attorney Docket No. RBN-001DV, filed on 07/29/03; and

- 4) U.S. Application Serial No. 11/446,864, Attorney Docket No. RBN-004, filed on
06/05/06.

REMARKS

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed (CHECK ONE):

- ☒ (1) within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office Action** on the merits, or before the mailing of a **first Office Action** after the filing of a request for continued examination under 37 C.F.R. 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a **final Action** or a **Notice of Allowance** under 37 C.F.R. 1.311, and
- ☐ the requisite Statement is below, **OR**
- ☐ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein, or
- ☐ (3) after the mailing date of a **final Action** or **Notice of Allowance** but before the payment of the **Issue Fee, AND**
- ☐ the requisite Statement is below, **AND**
- ☐ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein.

It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

STATEMENT

As required under 37 C.F.R. 1.97(e), Applicant(s), through the undersigned, hereby state either that [**check the appropriate space only if either (2) or (3) is checked above and the Statement is required**]:

- ☐ (1) Each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application **not more than three months** prior to the filing of the Information Disclosure Statement; or
- ☐ (2) No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this Statement after making reasonable inquiry, no item of

Information Disclosure Statement

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information contained in the Information Disclosure Statement was known to **any individual** designated in 37 C.F.R. 1.56(c) **more than three months** prior to the filing of the Information Disclosure Statement.

Respectfully submitted,

Date: September 8, 2006

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**INFORMATION DISCLOSURE STATEMENT**
Form PTO-1449

Complete if Known

Application Serial No.	10/552,642
Filing Date	October 7, 2005
First Named Inventor	Richard Bentley Cheatham
Examiner Name	Not yet assigned
Group Art Unit	Not yet assigned
Attorney Docket No.	RBN-003

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Name	Class	Sub Class	Filing Date if Appropriate

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number	Date	Country Code	Class	Sub Class	Filing Date	Abstract Only	English Language (Y/N?)
	B1	WO94/06934	03/31/94	WO				Y

NON PATENT LITERATURE DOCUMENTS

Examiner Initials		Include name of author (in CAPITAL LETTERS), date, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), volume-issue numbers, page numbers, publisher, and city where published (when appropriate).
	C19	Tillmar <i>et al.</i> , "Control of Insulin mRNA Stability in Rat Pancreatic Islets", The Journal of Biological Chemistry, Vol. 277, No. 2, pp. 1099-1106 (2002).
	C20	International Search Report for International Patent Application No. PCT/US2003/38475, 5 pgs. dated May 13, 2004.
	C21	International Search Report for International Patent Application No. PCT/US2000/35583, 4 pgs., dated April 18, 2001.
	C22	Anderson, N.E., <i>et al.</i> , "Autoimmune Pathogenesis of Paraneoplastic Neurological Syndromes," CRC Critical Reviews in Neurobiology, Vol. 3; pp. 245-299 (1987).
	C23	Antic, D., <i>et al.</i> , "Embryonic Lethal Abnormal Visual RNA-binding Proteins Involved in Growth, Differentiation, and Posttranscriptional Gene Expression," American Journal of Human Genetics Vol., 61; pp. 273-278 (1997).
	C24	Antic, D., <i>et al.</i> , "ELAV Tumor Antigen, Hel-N1, by Increases Translation of Neurofilament M mRNA and Induces Formation of Neurites in Human Teratocarcinoma Cells," Genes & Development, Vol. 13; pp. 449-461 (1999)
	C25	ASHLEY, T., <i>et al.</i> , "FMR1 Protein: Conserved RNP Family Domains and Selective RNA Binding", Science, Vol. 262 (1993).
	C26	Atasoy, U., <i>et al.</i> , "ELAV Protein HuA (HuR) can Redistribute Between the Nucleus and Cytoplasm and is Unregulated During Serum Stimulation and T Cell Activation," Journal of Cell Science, Vol. 111; pp. 3145-3156 (1998).
	C27	Buckanovich <i>et al.</i> , "The Neuronal RNA Binding Protein Nova-1 Recognizes Specific RNA Targets In Vitro and In Vivo," Molecular and Cellular Biology, 17(6), pp. 3194-3201 (1997).

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C28	Chen et al., "RNA-Protein Interactions: Involvement of NS3, NS5, and 3' Noncoding Regions of Japanese Encephalitis Virus Genomic RNA", <i>Journal of Virology</i> , Vol. 17, No. 5, pp. 3466-3473 (1997).
C29	Chambers, J.C., <i>et al.</i> , "Isolation and Analysis of cDNA Clones Expressing Human Lupus La Antigen," <i>Proc. Natl. Acad. Sci. USA</i> Vol. 82; pp. 2115-2119 (1985).
C30	Chu et al., "Identification of a Thymidylate Synthase Ribonucleoprotein Complex in Human Cancer Cells," <i>Molecular and Cellular Biology</i> , 14(1):207-213 (1994).
C31	Crino, P., <i>et al.</i> , "Presence and Phosphorylation of Transcription Factors in Developing Dendrites," <i>Proc. Natl. Acad. Sci. USA</i> Vol. 95; pp. 2313-2318 (1998).
C32	Dalmau, J., <i>et al.</i> , "The Expression of the Hu Antigen in Human Normal and Tumor Tissues," <i>American Journal of Pathology</i> Vol. 141; pp. 881-886 (1999).
C33	DEMARIA <i>et al.</i> , "AUF1 Binding Affinity to A+U-rich Elements Correlates with Rapid mRNA Degradation", <i>The Journal of Biological Chemistry</i> , Vol. 271, No. 21, pp. 12179-12184 (1996).
C34	Duggan, D.J., <i>et al.</i> , "Expression Profiling using cDNA Microarrays," <i>Nature Genetics</i> , Vol. 21; pp. 10-14 (1999).
C35	Fan, X.C., <i>et al.</i> , "Overexpression of HuR, a Nuclear-Cytoplasmic Shuttling Protein, Increases the <i>in vivo</i> Stability of ARE-Containing mRNAs," <i>The EMBO Journal</i> Vol. 17; pp. 3448-3460 (1998).
C36	Gao, F.B., <i>et al.</i> , "Hel-N1/Hel-N2 Proteins are Bound to PolyA + mRNA in Granular RNP Structures and are Implicated in Neuronal Differentiation," <i>Journal of Cell Science</i> Vol. 109, pp. 579-589 (1996).
C37	Gao, F., <i>et al.</i> , "Selection of a Subset of mRNAs from 3'UTR Combinatorial Libraries Using Neuronal RNA-Binding Protein, Hel-N1," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 91; pp. 11207-11211 (1994).
C38	Good, P.J., "A Conserved Family of Elav-Like Genes in Vertebrates," <i>Proc. Nat. Acad. Sci.</i> Vol. 92; pp. 4557-4561 (1995).
C39	Görlach <i>et al.</i> , "The Determinants of RNA-Binding Specificity of the Heterogeneous Nuclear Ribonucleoprotein C Proteins", <i>The Journal of Biological Chemistry</i> , Vol. 269, No. 37, pp. 23074-23078 (1994).
C40	Görlach <i>et al.</i> , "The mRNA Poly(A)-Binding Protein: Localization, Abundance, and RNA-Binding Specificity", <i>Experimental Cell Research</i> , Vol. 211, Issue 2, pp. 400-407 (1994).
C41	Jain, R.G., <i>et al.</i> , "Ectopic Expression of Hel-N1, and RNA-Binding Protein, Increases Glucose Transporter (GLUT1) Expression in 3T3-L1 Adipocytes," <i>Molecular and Cellular Biology</i> Vol. 17; pp. 954-962 (1997).
C42	Keene, J.D., "Combinatorial Chemistry: Randomization and Selection of RNA to Identify Targets for RRM RNA-Binding Proteins and Antibodies," <i>Methods in Enzymology</i> , J.E. Dahlberg and J.N. Abelson, Eds., Academic Press, Inc. San Diego Vol. 267; pp. 367-383 (1996).
C43	Keene, J.D., "Invited Commentary: Why is Hu Where? Shuttling of Early-Response Gene Messenger RNA Subsets," <i>Proc. Natl. Acad. Sci. USA</i> Vol. 96; pp. 5-7 (1999).
C44	Keene, J.D., "Methods and Compositions Useful in the Diagnosis and Treatment of Autoimmune Diseases," <i>Biotechnology Advances</i> , GB Vol. 15; p. 525 Abstract (1997).
C45	Keene, J.D., "RNA Surfaces as Functional Mimetics of Proteins," <i>Chemistry & Biology</i> , Vol. 3; pp. 505-513
C46	King, P.H., <i>et al.</i> , "Mammalian Homologs of Drosophila ELAV Localized to a Neuronal Subset can Bind <i>in vitro</i> to the 3' UTR of mRNA Encoding the Id Transcriptional Repressor," <i>Journal of Neuroscience</i> , Vol. 14; pp. 1943-1952 (1993).
C47	Levine, T.D., <i>et al.</i> , "Hel-N1: An Automimmune RNA-Binding Protein with Specificity for 3' Uridylate-Rich Untranslated Regions of Growth Factor mRNAs," <i>Molecular and Cellular Biology</i> , Vol. 13; pp. 3494-3504 (1994).
C48	Levy, N.S., <i>et al.</i> , "Hypoxic Stabilization of Vascular Endothelial Growth Factor mRNA by the RNA-Binding Protein, HuR," <i>Journal of Biological Chemistry</i> , Vol. 273; pp. 6417-6423 (1998).

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	C49	Loftus, S.K., <i>et al.</i> , "Informatic Selection of a Neural Crest-Melanocyte cDNA set for Microarray Analysis," Proc. Natl. Acad. Sci. USA Vol. 96; pp. 9277-9280 (1999).
	C50	Lutz-Freyermuth, C., <i>et al.</i> , "The U1 RNA Binding Site of the U1 snRNP-Associated A Protein Suggests a Similarity with U2 snRNPs," Molecular and Cellular Biology, Vol. 9; pp. 2975-2982 (1989).
	C51	Ma <i>et al.</i> , "Cloning and Characterization of HuR, a Ubiquitously Expressed Elav-like Protein", J.of Biol.Chem., 271:14, pp. 8144-8151 (1996).
	C52	Peng, S., <i>et al.</i> , "RNA Stabilization by the AU-Rich Element Binding Protein, HuR, an ELAV Protein," The EMBO Journal J, Vol. 17; pp. 3461-3470 (1998).
	C53	Pérez <i>et al.</i> , "Multiple RRM's Contribute to RNA Binding Specificity and Affinity for Polypyrimidine Tract Binding Protein", Biochemistry, Vol. 36, pp. 11881-11890 (1997).
	C54	Perou, C.M., <i>et al.</i> , "Distinctive Gene Expression Patterns in Human Mammary Epithelial Cells and Breast Cancers," Proc. Natl. Acad. Sci. USA, Vol. 96; pp. 9212-9217 (1999).
	C55	Richter, J.D., "Analysis of mRNA Formation and Function," Academic Press, San Diego, p. 237-261 (1997).
	C56	Schiavi, S.C., <i>et al.</i> , "Regulation of Proto-Oncogene mRNA Stability," Biochemical and Biophysical Acta Vol. 1114; pp. 95-106 (1992).
	C57	Sgroi, D.C., <i>et al.</i> , "In Vivo Gene Expression Profile Analysis of Human Breast Cancer Progression," Cancer Research Vol. 59; pp. 5656-5661 (1999).
	C58	Shimkets, <i>et al.</i> , "Nature Biotechnology," Vol. 17, 798-803 (1999).
	C59	Tamanini <i>et al.</i> "Oligomerization Properties of Fragile-X Mental-Retardation Protein (FMRP) and the Fragile-X-Related Proteins FXR1P and FXR2P", Biochem., Vol. 343, pp. 517-523 (1999).
	C60	Tsai, D.E., <i>et al.</i> , "U1snRNP-A Protein Selects a Ten Nucleotide Consensus Sequence from a Degenerate RNA Pool Presented in Various Structural Contexts," Nucleic Acids Research, Vol., 19; pp. 4931-4936 (1991).
	C61	Tsai, D.E., <i>et al.</i> , "In Vitro Selection of an RNA Epitope Immunologically Cross-Reactive with a Peptide," Proc. Natl. Acad. Sci. USA, Vol. 89; pp. 8864-8868 (1992).
	C62	Velculescu, V.E., <i>et al.</i> , "Serial Analysis of Gene Expression," Science Vol. 270; pp. 484-487 (1995).
	C63	Velculescu, V.E., <i>et al.</i> , "Characterization of the Yeast Transcriptome", Cell, Vol. 88; pp. 243-251 (1997).
	C64	Wang, W., <i>et al.</i> , "HuR Regulates Cyclin A and Cyclin B1 mRNA Stability During Cell Proliferation," The EMBO Journal, Vol. 19; pp. 1-12 (2000).
	C65	Wei <i>et al.</i> , "Wheat Germ Poly(A) Binding Protein Enhances the Binding Affinity of Eukaryotic Initiation Factor 4F and (iso)4F for Cap Analogues", Biochemistry, Vol. 37, pp. 1910-1916 (1998).
	C66	Wen, X., <i>et al.</i> , "Large-Scale Temporal Gene Expression Mapping of Central Nervous System Development," Proc. Natl. Sci. Acad. USA, Vol. 95; pp. 334-339 (1998)
	C67	Wurtz <i>et al.</i> , "Identification of Two RNA-Binding Proteins in Balbiani Ring Premessenger Ribonucleoprotein Granules and Presence of These Proteins in Specific Subsets of Heterogeneous Nuclear Ribonucleoprotein Particles", Molecular and Cellular Biology, Vol. 16, No. 4, pp. 1425-1435 (1996).
	C68	Yang, G.P., <i>et al.</i> , "Combining SSH and cDNA Microarrays for Rapid Identification of Differentially Expressed Genes," Nucleic Acids Research Vol. 27; pp. 1517-1523 (1999).
	C69	Zhang, J., <i>et al.</i> , "A Novel Cytoplasmic Protein with RNA-Binding Motifs is an Autoantigen in Human Hepatocellular Carcinoma," Journal of Experimental Medicine Vol. 189; pp. 1101-1110 (1999).
	C70	Zhao, R., <i>et al.</i> , "Analysis of p53-Regulated Gene Expression Patterns using Oligonucleotide Arrays," Genes & Development, Vol. 14; pp. 981-993 (2000).
	C71	Zong, Q., <i>et al.</i> , "Messenger RNA Translation State: The Second Dimension of High-Throughput Expression Screening," Proc. Natl. Acad. Sci. USA, Vol. 96; pp. 10632-10636 (1999).

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